## NEW TAXA IN VICTORIAN POACEAE

by

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# ABSTRACT

Walsh. N. G. New taxa in Victorian Poaceae. *Muelleria* 7(3): 379–387 (1991). — Four new species *Poa sallacustris, Poa lowanensis, Danthonia lepidopoda, Deyeuxia talariata* and a new variety *perlaxa* of *Puccinellia stricta* are described and illustrated. Their distribution, habitat, abundance and relationships with other species are discussed.

### INTRODUCTION

In the course of preparing an account of the Victorian Poaceae for a forthcoming state flora, several previously unnamed taxa were encountered. The majority of these are presented here. Others requiring further investigation or which are relevant to current research by specialists, will be described if necessary at a later date.

### TAXONOMY

### POA L.

# Poa sallacustris N. G. Walsh sp. nov.

*P. fordeana* F. Muell. affinis sed foliis angustioribus, laevibus, spiculis brevioribus, glumis equalibus vel longioribus quam lemmate inferno et habitatione dissimili differt.

TYPUS: Victoria, Lake Corangamite, SW of Causeway and Lake Martin, 11.5 km SW of Cressy, 27 km NNW of Colac P.O., 12 Sept. 1977, A.C. Beauglehole 56460 & G.J. Hirth. (HOLOTYPUS: MEL; ISOTYPI: BRI, NSW).

*Rhizomatous perennial*, culms ascending to erect, terete to somewhat compressed, to 30 cm high. *Leaves* smooth and glabrous; sheaths tubular in lower part; blades loosely to closely folded, firm, to 12 cm  $\times$  2 mm when flattened, abruptly tapered to a keeled, acute, often slightly incurved apex; ligule thinly membranous, acute to obtuse, 1–2 mm long. *Inflorescence* an ovate panicle, to c. 10  $\times$  7 cm, the branches bare for the greater part, finally widely spreading; spikelets 4–6 flowered, 5–8 mm long; glumes subequal, 3–nerved, equal to or slightly longer than the adjacent lemmas, smooth or scaberulous along keel; web not or weakly developed; lemma acute, 5–nerved, c. 3 mm long, rather firm, lower lemmas mostly with long hairs on the keel in the lower half, and occasionally also along the lateral nerves near the base, the internerves usually glabrous, upper lemmas with rather few, short hairs near base; palea equal to lemma, scabrous along the keels in the upper half, otherwise glabrous or with scattered hairs on the internerve area in the lower half.

#### OTHER SPECIMENS EXAMINED:

Victoria — Lake Terangpom Wildlife Reserve, 12 Jan. 1979, A.C. Beauglehole 63155 (MEL, HO, BRI); Krause Swamp Wildlife Reserve 10 Jan. 1979, A.C. Beauglehole 63036 (MEL, BRI); SW shore of Lake Linlithgow, 14 Dec. 1990, D. Frood (MEL); N end of Black Lake, c. 15 km NNW of Skipton, 20 Dec. 1990, D. Frood (MEL).

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Fig. 1. Poa sallacustris. a — ×1/2. b — spikelet ×6. c — florets from upper and lower part of spikelet ×6. All drawn from Beauglehole 56460 (MEL). Poa lowanensis. d — habit ×1/3. e — spikelet ×6. f — floret ×6. All drawn from Beauglehole 29505 (MEL). Puccinellia stricta var. perlaxa. g — habit ×1/3. h — spikelet ×6. i — floret ×6. All drawn from Albrecht 522 (MEL).

### DISTRIBUTION AND CONSERVATION STATUS:

Apparently endemic in Victoria where known only by a few collections from margins of salt lakes west of Melbourne between Colac and Hamilton. Two of the lakes are within wildlife reserves managed primarily for waterfowl. Considering the small number of collections and the abundance of apparently suitable habitat (*i.e.* salt lakes) across the volcanic plain, it is likely that the species has diminished as a consequence of habitat modification through clearing and grazing. Field observations indicate that *P. sallacustris* does not persist following regular grazing (D. Frood *pers. comm.*) Its conservation status is therefore assessed as "vulnerable" with Risk Code 3VCi (Briggs and Leigh 1989).

#### HABITAT:

All collections of the species are from verges of slightly to strongly saline lakes on the Victorian volcanic plain (Quaternary basalt). The substrates include sticky grey clay, sandy buckshot gravel mixed with basalt pebbles, and at Lake Corangamite, deep deposits of the small aquatic snail *Coxiella striata*. *P. sallacustris* occurs above the saltmarsh zone if such a zone is present at the site. Associated species include *Schoenus nitens*, *Wilsonia backhousei*, *Epilobium billardieranum* and *Plantago coronopus*.

#### NOTES:

By the closed leaf-sheath, the membranous ligule, rhizomatous habit of growth and lacustrine habitat, *P. sallacustris* is clearly closely related to *P. fordeana* F. Muell. a robust species which occurs chiefly on the Murray River floodplain in Victoria and in similar situations in Queensland, South Australia and New South Wales. *P. sallacustris* is readily distinguished from *P. fordeana* by its overall smaller stature, smooth, narrower leaf-blades, smaller spikelets, and glumes which are as long as or longer than their adjacent lemmas. The saline conditions prevailing where *P. sallacustris* occurs are also quite different from the non-saline, alluvial sites inhabited by *P. fordeana*. The epithet *sal* (salt) + *lacustris* (lakeside), is derived from the species' habitat.

Specimens of *P. sallacustris* have in the past been identified as *P. ensiformis* Vickery, typically a species of wet mountain forests, and the introduced, widespread *P. pratensis* L.. From the former, *P. sallacustris* differs in its non-tussocking habit, its non-membranous lemmas on which the hairs are virtually confined to the midvein and lateral nerves, and in its unpigmented leaf-sheaths. From *P. pratensis*, *P. sallacustris* differs in having firm, acute lemmas with the web not or only weakly developed. Neither *P. ensiformis* nor *P. pratensis* have closed leaf-sheaths or are they characteristic of lacustrine environments.

Collections from Lake Linlithgow and at nearby Krause Swamp differ slightly from others in having lemmas which are sparsely hairy to glabrescent basally, but are consistent in all other features examined.

### Poa lowanensis N.G. Walsh sp. nov.

**P. poiformi** (Labill.) Druce affinis sed culmis duplo longioribus foliis plerumque, spiculis purpurascentibus, lemmatis truncatis vel emarginatis, marginibus membranaceis late, et habitatione dissimili differt.

TYPUS: Victoria, Wyperfeld National Park, NE corner of "The Hump", 11 Nov. 1968, A.C. Beauglehole 29505 & E.W. Finck (HOLOTYPUS: MEL).

*Tufted or shortly rhizomatous perennial*, culms erect, to *c*. 90 cm high. *Leaves* usually stiffly erect and sharp-tipped, up to *c*. half as high as the culm, green or somewhat glaucous; sheaths pale or purplish, glabrous, smooth; blades inrolled and 0.5–1.5 mm diam., loosely inrolled or folded, to 3 mm wide when flattened, smooth on the outer (lower) surface, scabrous or scabrous-pubescent on the inner

(upper) surface; ligule truncate, firmly membranous, c. 0.5 mm long, minutely pubescent on abaxial surface. Inflorescence to c. 25 cm long, all branches contracted or the lower sometimes spreading, usually bare of spikelets in the lower half; spikelets 3-6 flowered, 5-7 mm long, usually dappled purple and brownish; glumes 3-nerved, subequal or the lower slightly shorter, 3/4 as long as to subequal to the lower lemmas; web copious; lemma 3-5 mm long, oblong, obtuse, truncate or emarginate, with rather broad membranous margins, often erose at apex, pubescent on the back in the lower half, rarely the internerves glabrous, the keel often long-hairy near the base; palea subequal to lemma, hairy on the back in the lower two-thirds.

# SELECTED SPECIMENS EXAMINED (total examined = 16):

Victoria — Wyperfeld National Park, within 3 miles (5 km) of Wonga Hut, 5 Nov. 1960, A.C. Beauglehole 7151 & J. Landy (MEL); Wyperfeld National Park, Dingo Swamp, E of Lost Lake, 10 Nov. 1968, A.C. Beauglehole, 29431 & E.W. Finck (MEL); Wyperfeld National Park, S of Little Callitris Plain, 11 Nov. 1968, A.C. Beauglehole 29447 & E.W. Finck (MEL); Wyperfeld National Park, 1 mile (1.6 km) NW of Quail Lakes, 10 Oct. 1968, A.C. Beauglehole 29164 & E.W. Finck (MEL); Wyperfeld National Park, 1 mile (1.6 km) S of Dattuck Track & Cambacanya Clearing, 2 Oct. 1968, A.C. Beauglehole 28804 (MEL); Sunset Country, 1 km ENE of Spectacle Lake, 9 Oct. 1986, D.C. Cheal (MFL) (MEL).

# DISTRIBUTION AND CONSERVATION STATUS:

Known only from north-west Victoria (Big Desert and Sunset Country) with most collections being confined to an area of about  $20 \times 20$  km in Wyperfeld National Park.

The species is regarded here as "rare". All known populations are contained within existing or proposed national parks. The Risk Code is assessed as 2RCa (Briggs & Leigh 1989).

# HABITAT:

Occurs in mallee scrub with e.g. Eucalyptus incrassata, E. socialis, E. leptophylla etc., and in Triodia irritans tussock grassland developed on deep siliceous sands.

## NOTES:

Specimens of this species at MEL were initially tentatively referred by J. W. Vickery to P. clelandii Vickery, a species of south-eastern South Australia, southern Victoria and Tasmania, but which differs manifestly from P. lowanensis in having typically strongly pigmented, purplish sheaths, flat or folded blades, strongly compressed culms, smaller spikelets, shorter and relatively broader lemmas and the web only weakly developed or absent. P. lowanensis is much more closely allied to P. poiformis, a common species of southern Australian coasts, which differs in having relatively shorter flowering culms, generally about as long as or sometimes shorter than the leaves, branches of the inflorescence with spikelets virtually to the base, spikelets without purple pigmentation and relatively narrow lemmas which are firm throughout or have only narrow membranous margins.

Lowan mallee is the name which has been conferred upon associations of mallee vegetation on inland sand-dunes and it is from this association, the habitat of P. lowanensis, that the specific epithet is derived.

# PUCCINELLIA PARL.

Puccinellia stricta (J.D. Hook.) C. Blom var. perlaxa Stapf ex N.G. Walsh comb. nov..

A varietate typica ramis inforescentiae effusis late sub anthesi et spiculis plerumque flosculis paucioribus differt.

*Tufted annual or perennial*, culms erect, to 50 cm high. *Leaves* pale green to glaucescent, glabrous; sheaths often rather broad and loose; blades narrow, closely folded or inrolled, to 30 cm  $\times$  1 mm; ligule blunt, 1–2 mm long. Inflorescence a broad ovate panicle, with fine, widely spreading or sometimes deflexed branches (resembling some *Panicum* spp.), to  $30 \times 25$  cm, usually fully exserted from upper sheath; spikelets mostly 4–5 (rarely 6) flowered, 5–8 mm long, frequently purplish; lower glume 1–2 mm long, upper glume 2.2–3 mm long; lemma 2.5–3 mm long, smooth and glabrous except for a few short hairs near the base; palea subequal to lemma.

# SELECTED SPECIMENS EXAMINED (Total examined = 31):

Victoria — Glenthompson, 9 Apr. 1987, A. Brown 16 (MEL); Beeac, 1963, A.C. Beauglehole
 42599 (MEL); Lake Goldsmith, between Beaufort and Skipton, 15 Jan. 1960, F. Swindley (MEL);
 Lake Werowrap, 13 km NW of Colac, s. dat. F. Swindley (MEL); Cobra-Killack Wildlife Reserve, 11
 Jan. 1979, A.C. Beauglehole 63080 (MEL); Lake Corangamite, south-east of Culdare, 14 Oct. 1982,
 N.H. Scarlett 82-114 (MEL).

Tasmania - Valley Field Rd, c. 3 km SE of Barton Rd (c. 50 km SE of Launceston), 16 Jan. 1987, D.I. Morris 86176 (HO, MEL).

# DISTRIBUTION AND CONSERVATION STATUS:

Scattered in southern Victoria from Port Phillip area in the east as far west as Port Fairy. A single collection from north-eastern Tasmania is known.

The variety is not regarded as rare or threatened in Victoria but its status in Tasmania requires further investigation.

#### HABITAT:

Like the typical variety of the species, P. stricta var. perlaxa (and most other members of the genus in Australia), is virtually confined to saltmarsh communities, mostly dominated by Sarcocornia spp., Halosarcia spp., Wilsonia spp. etc. Unlike the typical variety however, var. perlaxa occurs more commonly in saltmarsh communities fringing salt lakes in south-western Victoria, on heavy soils derived from Quaternary basalt or on Coxiella shell deposits. The Tasmanian plants were found growing in a creek bed cutting through pasture paddocks with saline lagoons nearby, on soils derived from dolerite or basalt (D.I. Morris pers. comm.). The typical variety in Victoria is known only from coastal sites and sandy margins of salinated water bodies in the northern part of the state (e.g. Mildura and Kerang areas).

#### NOTES:

Some specimens of this entity at MEL have been labelled as the introduced P. distans (L.) Parl., a species somewhat resembling P. stricta var. perlaxa in the diffuse panicle, but differing chiefly in the perennial habit and smaller spikelets and florets (to 6 mm and 2.5 mm respectively). The new variety is readily distinguished from P. stricta var. stricta in the widely spreading panicle with spikelets having fewer (usually < 5) florets, joined by rhachilla segments more slender and longer than those of the typical variety (usually  $\ge 1/3$  the length of the floret, c.f. usually c. 1/4 the length of the floret in var. stricta). On the basis of these features, it was initially intended to recognize the taxon as a species distinct from P. stricta, however, several broadly paniculate specimens exhibit floret characteristics approaching those of the typical form and for this reason the lower status has been adopted here.

Those specimens of somewhat intermediate form occur at sites virtually combining the typical habitats of both varieties, i.e. coastal saltmarsh formed on basalt-derived substrates (e.g. Altona, Pt Cook, Port Fairy).

P. stricta var. perlaxa is the taxon referred to by P.F. Morris in Ewart (1930) as Atropis (= Puccinellia) magellanica Desv., a species indigenous to South America. The application of this name resulted from misidentification of a fragment sent to A.S. Hitchcock (US).

In correspondence to Prof. A. J. Ewart (then Government Botanist at MEL), O. Stapf (KEW) suggested *Puccinellia stricta* f. *perlaxa* to be an appropriate name for specimens submitted to him by Ewart in 1912. Some specimens at MEL were later annotated as *P. stricta* var. *perlaxa*, presumably in the assumption that Stapf had published, or intended to publish this combination. However this work has not been located in any botanical literature and is presumed to have never been validly published. The epithet is appropriate and is here formalized (albeit as a variety rather than a form), hopefully by so doing avoiding any confusion which may have arisen if a new epithet were chosen.

# DANTHONIA LAM. & DC.

# Danthonia lepidopoda N.G. Walsh sp. nov.

Chionochloa pallidae affinis sed statura parviore, foliis planis vel canaliculatis, flosculis parvioribus arista torta vix, pilis lemmatis serie supera caespitosis infirme et a speciebus omnibus Danthoniae et Chionochloae Australiensis productis plerumque rhizomatis squamatis differt.

TYPUS: Victoria, South Belgrave, "Bullens Land" Courtneys Rd, immediately north of Ash Reserve, 37° 56'40"S, 145°20'45"E, 15.i.1987, N.G. Walsh 1709, (HOLOTYPUS: MEL; ISOTYPI: BRI, NSW).

Perennial, developing long, scaly rhizomes. Culms to 60 cm high. Leaves weakly tufted, glabrous to sparsely hairy; blades flat or channeled, becoming inrolled on drying, to 15 cm long and 2 mm wide; ligule a ciliate rim c. 0.5 mm long, with a tuft of longer hairs at the sides. *Panicle* linear to narrowly ovate, to 8 cm long, rather sparse and with few (usually <20) spikelets. Spikelets purplish when young, mostly 3 or 4-flowered; glumes subequal, lanceolate, 8-14 mm long; lemma 3-4 mm long, lightly and more or less evenly covered with hairs which are weakly aggregated into tufts in an indistinct, slightly longer upper series; lateral lobes erect, 3-5 mm long, scaberulous, evenly tapered to the 1-2 mm long setiform tips, or setae lacking; central awn weakly twisted in the lower c. 2 mm, exceeding lateral lobes by 3-6 mm; palea narrow lanceolate or oblong, far exceeding sinus and approaching or equal to the tips of the lateral lobes.

### REPRESENTATIVE SPECIMENS (total examined = 15):

*Victoria* — Grampians, Mt William, Nov. 1882, *Sullivan* (MEL); Grampians, E side of Victoria Range, 17 Jan. 1969, *A.C. Beauglehole 30296* (MEL, NSW); Grampians, 1.5 miles (*c.* 2 km) ENE of Halls Gap, 21 Dec. 1968, *A.C. Beauglehole 30136* (MEL, NSW); Grampians, Mt Abrupt, 30 Dec. 1968, *A.C. Beauglehole 30216* (MEL, NSW); Otways, *c.* 13.5 km NE of Port Campbell P.O., 22 Mar. 1974, *A.C. Beauglehole 44307* (MEL, NSW); Otways, *c.* 38 km NW of Cape Otway Lighthouse, 20 Mar. 1974, *A.C. Beauglehole 44303* (MEL); Otways, Benwerrin, 9.6 km NNW of Lorne, 3 Jan. 1974, *A.C. Beauglehole 43912* (MEL, NSW); Beenak area, 7.5 km SE of Egg Rock, 10 Jan. 1980, S.J. Forbes 335 (MEL).

### DISTRIBUTION AND CONSERVATION STATUS:

D. lepidopoda is apparently endemic in Victoria from where it has been collected from The Grampians mountains, the Otway Range (mostly toward the coast) and the south-eastern slopes of the Dandenong Ranges (some 40 km ESE from Melbourne). Although apparently confined to these three disjunct areas, the species is moderately common in the Grampians and Otways at least (but only two collections have been identified from the Dandenong Ranges area), and is not considered rare or threatened.



Fig. 2. Danthonia lepidopoda. a — habit ×1/3. b — spikelet ×3. c — floret ×3. a drawn from Sullivan s. n. (MEL); b, c drawn from Beauglehole 30296 (MEL). Danthonia talariata. d — habit ×1/4. e — spikelet ×6. f — floret ×6. All drawn from Walsh 801 (MEL).

# HABITAT:

Occurs on sandy or gritty soils derived from granite or sedimentary rocks, usually in heathland or heathy woodland communities. Associated species have been noted as including *Eucalyptus cephalocarpa*, *E. willisii*, *E. sieberi*, *E. baxteri*, *E. dives*, *Banksia spinulosa*, *Pultenaea mollis*, *Indigofera australis*, *Stipa muelleri*, *Deyeuxia rodwayi* and *Culcita dubia*.

#### NOTES:

Specimens of *D. lepidopoda* have been in the past been referred to *Danthonia* (= *Chionochloa*) pallida or sp. aff., *D. induta* or sp. aff., *D. procera*, *D. monticola*, *D. geniculata*, or *D. caespitosa*.

The lemma of *D. lepidopoda* most nearly resembles that of *Chionochloa* pallida in the short, hardly setiform lateral lobes, which are almost equalled by the long-exserted palea and the general indumentum. However, the organization of hairs on the lemma into a weakly tufted upper series and the elliptic, basal hilum of the caryopsis are features characteristic of *Danthonia* (Notodanthonia)

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sens. Zotov 1963) rather than Chionochloa (Zotov 1963) and commits the new species to that genus. Further, *C. pallida* is a robust, strongly caespitose plant, with narrow, involute leaf blades, numerous spikelets per inflorescence, and larger florets with the lemma having a strongly twisted awn, all features not shared by the new species. *Danthonia induta* differs from *D. lepidopoda* in its robust habit, relatively large panicle with numerous spikelets, larger lemma with hairs organized into definite upper and lower series (as well as scattered between the series), longer, strongly twisted awn, and the palea which does not approach the tips of the lateral lemma lobes.

The long-creeping, scaly rhizome is atypical for either *Danthonia* or *Chionochloa* (at least amongst Australian species) and the specific epithet (meaning "scaly foot") refers to this feature.

# DEYEUXIA CLAR. EX P. BEAUV.

# Deyeuxia talariata N.G. Walsh sp. nov.

D. affini M. Gray similis sed spiculis majoribus, 3.6-5 mm longis, arista minuta vel nulla et statura elatiore differt.

HOLOTYPUS: Victoria, East Gippsland, 0.5 km S of Moscow Peak, 2 km NNW of Mt Cobberas no.1, 36°15′50″S, 148°08′45″E, 22 Feb. 1982, N.G. Walsh 801 (MEL).

Shortly rhizomatous perennial, culms erect, 25-110 cm high. Leaves smooth to slightly scaberulous, glabrous or the sheaths sometimes sparsely ciliate along the margin; blades rather stiff, loosely to closely folded, 6-40 cm  $\times 1.5-3$  mm when flattened out; ligule membranous, truncate, 1.5-3 mm long. Inflorescence a rather dense, cylindrical panicle 4-17 cm long, sometimes interrupted near the base; spikelets 3.6-5 mm long, usually slightly purplish; glumes narrowly acute, subequal, scabrous along the keel in the upper part; lemma acute, equal to or slightly exceeding the glumes, 5-nerved, evenly and minutely scabrous, becoming somewhat hardened at maturity, awnless or shortly awned from apex or just below; awn (when present) straight, to 0.8 mm long, exceeding lemma by up to 0.5 mm; palea slightly shorter than lemma; callus hairs dense, silky, 2/3 to as long as lemma; rhachilla bristle 1-1.5 mm long, plumose, with hairs virtually reaching the apex of the lemma.

# OTHER SPECIMENS EXAMINED:

Victoria — Playgrounds, 2 km SW from Mt Cobberas no. 1, 19 Apr. 1981, S.J. Forbes 917 & H. van Rees (MEL); Forlorn Hope Track, 10.8 km NNW of Mt Nunniong, 13 Feb. 1980, H. van Rees 87 & S.J. Forbes (MEL).

New South Wales — South Coast/Southern Tablelands, Square Swamp, 2.2 km NW of Wog Wog Trig., 21 Feb. 1987, D.E. Albrecht 3063 (MEL, NSW).

# DISTRIBUTION AND CONSERVATION STATUS:

Occurs in eastern Victoria on the Nunniong Plateau and the nearby Cobberas mountains. In south-eastern New South Wales, the species is known from a single collection on the Mt Wog Wog Plateau (inland from Eden). The species is known form only four collections, three of which are contained within National Parks (Cobberas N.P. in Victoria, Nalbaugh N.P. in N.S.W.) but the Victorian sites are subject to grazing by cattle and/or brumbies which are prevalent in the area. The species is here regarded as "vulnerable", with Risk Code 3VCi (Briggs and Leigh 1989).

### HABITAT:

At each of the four sites from which it is known, *D. talariata* grows in sodden, Sphagnum-rich heath at altitudes above 1000 m. Associated species include Epacris paludosa, E. breviflora, Baeckea utilis and Poa costiniana. The underlying soils are generally coarse but derived from different bedrocks at each

site (granite, rhyolite and metamorphosed sediments), mixed with abundant organic material.

#### NOTES:

This species is closely allied to D. affinis M. Gray, an uncommon alpine and subalpine species from the Mt Kosciusko area of New South Wales and the Bogong High Plains in Victoria. D. talariata is distinguished from D. affinis by its greater overall robustness and larger inflorescences and spikelets, and by the minutely awned, or more frequently, unawned lemma. These two species, with D. parviseta var. boormanii, an uncommon entity from eastern Victoria and southern New South Wales, *D. innominata* D. Morris, from the alps and subalps of southern New South Wales, Victoria and Tasmania, and probably *D.* aucklandica of New Zealand appear to comprise a natural group within the genus, being related by virtue of the long, silky callus hairs, plumose callus bristle and smooth, relatively thin-textured, prominently veined lemma.

The specific epithet meaning "long-skirted" alludes to the long callus hairs encircling the base of the lemma.

## ACKNOWLEDGEMENTS

I would like to thank Arthur Chapman, Bureau of Flora and Fauna, Canberra, for his assistance with bibliographical details, Dennis Morris, Tasmanian Herbarium, Hobart, for alerting me to the existence in Tasmania of *Puccinellia stricta* var. *distans* and for his general comments on the manuscript, to Cliff Beauglehole, Portland, for his assistance in locating specimens of the Poa spp, to Doug Frood, Department of Conservation and Environment, Victoria, for further collections of and information about *Poa sallacustris*, and to Anita Barley, National Herbarium of Victoria who prepared the illustrations.

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Manuscript received 8 June 1990.

